

The book covers only the easier parts of 7090 coding. Input-output is touched on very briefly in lesson 10, which in essence states that input-output programming is outside the scope of the book. Lesson 4 indicates that floating-point arithmetic, except in barest outline, is also outside the scope of the book. Of the 13 floating-point instructions in the 7090 only 4 are mentioned. The FDP instruction (Floating Divide and Proceed) is omitted. The FDH instruction (Floating Divide and Halt), which should *never* be used by a programmer, is the only Floating Divide instruction presented here.

It is the opinion of the reviewer that a procedure-oriented language like Fortran should be used by the beginner in his first contact with the 7090. By the time he is ready to learn the details of 7090 machine language coding he should be much more than a beginner in the field of computer programming, and this text will not satisfy his needs.

Lesson 15, the last lesson in the book, presents the student with an example of a complete 7090 program. The example is poorly programmed. It is the kind of programming one should expect from the "fledgeling" programmer, but not from his instructor.

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37 [Z].—F. J. GRUENBERGER & D. D. McCRACKEN, *Introduction to Electronic Computers, Problem Solving with the IBM 1620*, John Wiley & Sons, Inc., New York, 1963, vii + 170 p., 28 cm. Price \$2.95.

The expressed purpose of this book is to have it serve as an introduction to computer programming by discussing examples of types of problems to which computers may be applied. The specific equipment used by way of illustration is the IBM 1620 (with paper tape input and output), and the book is designed to be used as an adjunct to the manual for the 1620. It is assumed in various parts of the book that the reader, through access to the computer itself, is able to resolve specific details of coding, although some of the essentials thereof are reviewed as the book progresses.

An introduction to organization and flow charting is first presented. Then, dealing in terms of machine language, the book explains the use of loops, subroutines, scaling of numerical data, and floating-point arithmetic. Illustrative problems are drawn from number theory. In addition, some examples of the use of random numbers and the playing of simple mathematical games are introduced. However, the book is addressed to a quite elementary level of reader—a background of high school mathematics is all that is required—and so the illustrations are necessarily of an elementary character. They do serve to convey some feeling for empirical tasks that computers can perform.

There is a brief discussion of assembly programming and debugging. The treatment of automatic programming, i.e., interpreters, compilers, and generators, is very sketchy.

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